

**What is claimed is:**

1. An intramedullary nail for insertion within an intramedullary canal of a long bone and fixing a fracture in the long bone, the nail comprising:
  - 5 an elongate member having a longitudinal axis, a proximal end section, a distal end section and a solid central section extending between said proximal and distal end sections, said proximal and distal end sections respectively including proximal and distal fastener receiving areas of greater cross-sectional dimensions than said central section, said fastener receiving  
10 areas each having at least one hole extending transverse to the longitudinal axis for receiving a cross fastener adapted to secure to the bone on opposite sides of said elongate member, said proximal and distal end sections thereby providing rigid anchoring locations relative to said central section, and said central section providing flexibility to promote healing of  
15 the fracture.
  2. The intramedullary nail of claim 1, wherein said central section is malleable to allow bending of at least the proximal end section with respect to the central section.
  3. The intramedullary nail recited in claim 1, wherein the central  
20 section of said elongate member is curved between said fastener receiving areas in a sagittal plane transverse to respective axes of the holes, said

curved central section thereby adapted to conform with the intramedullary canal.

4.           The intramedullary nail of claim 3, wherein said elongate member further includes a proximal bend located distally of the fastener receiving area of said proximal end section, said proximal bend forming an acute angle relative to the sagittal plane containing the axis of curvature of said central section.
5.           The intramedullary nail of claim 4, wherein said elongate member further includes a distal bend located proximally of the fastener receiving area of said distal end section, said distal bend forming an acute angle relative to the sagittal plane containing the axis of curvature of said central section and being on the same side of the sagittal plane as the proximal bend.
6.           The intramedullary nail of claim 1, wherein the ratio of the cross sectional dimensions of the respective proximal and distal fastener receiving areas at the axes of said holes relative to the cross sectional dimension of said central section is at least about 1.9:1.
7.           The intramedullary nail of claim 1, wherein said distal fastener receiving area is tapered on proximal and distal ends thereof and said proximal fastener receiving area is tapered on a distal end thereof.

8. The intramedullary nail of claim 1, wherein the holes extend along respective axes and the axes of said holes are generally coplanar.

9. The intramedullary nail of claim 1 further comprising cross fasteners respectively received in the holes, each cross fastener having a threaded distal tip, a threaded proximal shank and an unthreaded portion between the threaded distal tip and the threaded proximal shank, said unthreaded portion adapted to be received in one of said holes and said threaded distal tip and proximal shank adapted to engage bone matter on opposite sides of said one hole.

10 <sup>10.13</sup> A method of fixing a fracture in a long bone of a patient having an intramedullary canal, the method comprising:

providing a elongate member having a solid central section having a cross sectional dimension and having proximal and distal fastener receiving areas of increased cross sectional dimension relative to the cross sectional dimension of the central section, the fastener receiving areas each having at least one hole extending transverse to a longitudinal axis of the elongate member,

inserting the elongate member into the intramedullary canal through an insertion point and across the fracture, and

20 inserting cross fasteners through each of said holes and into said bone on opposite sides of said elongate member to fix the fracture of the long bone against rotational and lengthening movements.

~~11~~ <sup>14</sup> The method of claim ~~10~~ <sup>13</sup>, wherein at least the central section of the elongate member is curved in a sagittal plane of the patient, and further comprising:

- 5 prior to the inserting step, laterally bending the proximal fastener receiving area of said elongate member at an acute angle out of the sagittal plane of the patient.

~~12~~ <sup>15</sup> The method of claim ~~11~~ <sup>14</sup> further comprising:  
bending the distal fastener receiving area of said elongate member at an acute angle out of the sagittal plane of the patient.

- 10 ~~13~~ <sup>16</sup> The method of claim ~~11~~ <sup>14</sup> further comprising:  
laterally bending the proximal fastener receiving area to conform to a right femur of the patient.

- ~~14~~ <sup>17</sup> The method of claim ~~11~~ <sup>14</sup> further comprising:  
laterally bending the proximal fastener receiving area to  
15 conform to a left femur of the patient.

- ~~15~~ <sup>18</sup> The method of claim ~~11~~ <sup>14</sup>, wherein the long bone is a femur and the insertion point is a point on the greater trochanter lateral of the piriformis fossa, and the method further comprises:  
laterally bending the proximal fastener receiving area to  
20 conform to the proximal femur of the patient and to present the proximal tip

of the elongate member at the insertion point for access and removal after healing of the fracture.

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An intramedullary nailing system for fixing a fracture in a long bone of a patient having an intramedullary canal, the system comprising:

- 5 an elongate member having a longitudinal axis, a proximal end section, a distal end section and a solid central section extending between said proximal and distal end sections, said proximal and distal end sections respectively including proximal and distal fastener receiving areas of greater cross-sectional dimensions than said central section, said fastener receiving areas each having at least one hole extending transverse to the longitudinal axis for receiving a cross fastener adapted to secure to the bone on opposite sides of said elongate member, said proximal and distal end sections thereby providing rigid anchoring locations relative to said central section, and said central section providing elastic flexibility to promote healing of the fracture, and
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a bending device having jaw structure configured to hold the elongate member and bend at least one of the proximal and distal end sections at angle relative to said central section.

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- The system of claim 16, wherein said bending device further comprises a pair of manually operable handles coupled with said jaw structure and adapted to be squeezed together to move the jaw structure.
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